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A PROPOSAL FOR THE ESTABLISHMENT OF A STATE VOCATIONAL  
EDUCATION RESEARCH COORDINATING UNIT IN MICHIGAN. FINAL  
REPORT.

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MICHIGAN VOCATIONAL EDUC. RES. COORD. UNIT, LANSING

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THE MICHIGAN VOCATIONAL EDUCATION RESEARCH COORDINATING  
UNIT WAS ESTABLISHED ON OCTOBER 27, 1965, AS A PART OF THE  
DIVISION OF VOCATIONAL EDUCATION OF THE MICHIGAN DEPARTMENT  
OF EDUCATION. ITS PURPOSES WERE TO STIMULATE RESEARCH AND  
DEVELOPMENT ACTIVITIES WHICH WOULD IMPROVE EXISTING PROGRAMS,  
TO COORDINATE OCCUPATIONAL RESEARCH, AND TO DISSEMINATE  
RESEARCH INFORMATION. ITS STAFF CONSISTS OF A COORDINATOR,  
TWO RESEARCH CONSULTANTS, A RESEARCH INTERN, AND TWO  
SECRETARIES. UNIT ACTIVITIES INCLUDED (1) IDENTIFYING  
RESEARCH AND DEVELOPMENT NEEDS, (2) IDENTIFYING INNOVATIVE  
LEADER SCHOOLS TO CONDUCT PILOT AND DEMONSTRATION PROJECTS,  
(3) PROMOTING LOCAL PROGRAMS, (4) CONDUCTING RESEARCH  
TRAINING WORKSHOPS, (5) PREPARING AND DISSEMINATING RESEARCH  
BRIEFS, (6) GIVING PROPOSAL WRITING ASSISTANCE AND  
CONSULTATION, AND (7) GATHERING REPORTS FOR THE EDUCATIONAL  
RESOURCES INFORMATION CENTER. THE APPENDIX GIVES OPERATIONAL  
POLICIES, FUNDING POLICIES, A LIST OF SUPPORTED PROJECTS, A  
FLOW CHART OF UNIT ACTIVITIES, AND A BIBLIOGRAPHY OF 22  
RESEARCH BRIEFS. (EM)

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE  
OFFICE OF EDUCATION

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FINAL REPORT  
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U.S. DEPARTMENT OF  
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Office of Education  
Bureau of Research

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APPROVED  
JUN 27 1967  
USOE PROJECT OFFICER

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Charles L. Langdon, Research Coordinator

June 1967

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Research Coordinating Unit  
Division of Vocational Education  
Michigan Department of Education

Lansing, Michigan

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## INTRODUCTION

The Vocational Education Research Coordinating Unit in Michigan was authorized to begin operating June 1, 1965, but actually was not established until the contract was received from the USOE on October 27 of that year. The contract was extended beyond the original expiration date of November 30, 1966, for a seven month period ending June 30, 1967, from unused funds during the original eighteen month funding period. A continuation proposal has been submitted to the USOE requesting a grant to assist in funding the Research Coordinating Unit for the twelve month period ending June 30, 1968.

The purpose of the Research Coordinating Unit is to stimulate research and developmental activities within the State which will improve existing programs of vocational education and develop needed new programs of vocational-technical education; to function as a coordinating unit for occupational research among those agencies and institutions conducting research and developmental activities; and to disseminate information that will reduce the time lag between research and practice.

Activities of the RCU have been largely guided by the broad objectives for units set forth in the First National Meeting of Directors of RCU's in Washington, D. C., during July, 1965. Resultingly, the major program objectives for the Michigan RCU, as set forth in the 1967-68 Projected Activities Report for the Division of Vocational Education, are as follows:

- (1) To build an atmosphere within the State that commits itself to research and is receptive to it--especially with state staff, school leaders, and legislators.
- (2) To stimulate projects, ideas, and understanding of research.
- (3) To provide leadership in research-related activities through seminars, conferences, and workshops.
- (4) To coordinate state education research efforts in the state agency with other state government and professional agencies and professions.
- (5) To serve as consultants on research ideas and projects that forward vocational education.
- (6) To disseminate research information that enables others to utilize recent research findings.

- (7) To identify research training needs and personnel.
- (8) To work toward the identification of basic issues and problems needing research.
- (9) To develop long range plans for research.
- (10) To gather or assist in gathering needed data for a computer-based system of educational information.
- (11) To work closely with R & D Programs, National Research Centers, and the U. S. Office of Education in coordination of the total research effort.

#### METHOD

The Research Coordinating Unit is a branch of the Program Development Section of the Division of Vocational Education of the Michigan Department of Education. The organizational structure is provided in Chart I. The Unit staff has at times consisted of only a director and secretary; at other times it has included a consultant, a part-time intern and an additional part-time secretary. During the past seven months, the staff has consisted of a director, two consultants and two secretaries.

The RCU utilized the counsel of an advisory committee, consisting of ten Michigan educators, and a resource committee consisting of a member from each occupational Service within the Division of Vocational Education.

Methodological detail is provided under the headings of Stimulation, Coordination, and Dissemination that follow.

##### Stimulation

Activities to stimulate research and development include actively promoting pilot and demonstration projects in Michigan and contracting for the operation of the projects, primarily utilizing State vocational education funds, Section 4(c) of the Vocational Education Act of 1963, and Title III of the Elementary Secondary Education Act, as funding sources. A section of the Application Manual, mailed to all local educational agencies annually, is devoted to the stimulation of R & D projects. Proposal formats and guidelines for writing proposals are supplied to educational agencies, upon request. A procedural bulletin, outlining major Federal and State R & D funding sources, requirements for project qualification, and application procedures is now being prepared, and will



be widely disseminated in July, 1967. Additional assistance in the stimulation of R & D activities has been provided through the R & D Needs Survey and the Diffusion Study, both conducted by the RCU. The former identified pilot and demonstration programs needed in Michigan; the latter identified those Michigan schools most receptive to conducting these programs.

The RCU has continuously worked for an increased commitment to R & D from Federal funds allocated by the Division of Vocational Education in its annual budget. Efforts are underway to obtain a commitment of State funds to R & D, in order to reduce the amount of local funds necessary to satisfy the Federal matching requirement for projects.

One Research Training Workshop has been held, with a second workshop tentatively scheduled to be held in November, 1967. Speeches at conferences, office and field contacts, surveys of R & D needs and priorities, and research seminars are among the other activities conducted to stimulate research and development in the State.

#### Coordination

Activities of a coordinative nature include the preparation of operational and funding policy statements; special meetings to inform the Division of Vocational Education of RCU and Michigan State University R & D Program activities; joint sponsorship of a conference with the ISU R & D Program; rendering assistance to the Director and the Services of the Division of Vocational Education with various projects and activities; working closely with the Area Program staff in developing programs in area vocational-technical schools and community colleges; meetings with Michigan-Ohio Regional Educational Laboratory staff; and meetings and jointly-sponsored projects with the Michigan Employment Security Commission, Michigan Office of Economic Expansion, Michigan Educational Research Council, and Battelle Memorial Institute.

Additional coordinative activities include meetings with various Department of Education agencies; establishment of procedures with ESEA Title III personnel for the cooperative review and funding of major vocational education projects; serving as a reader of ESEA Title III project proposals; working with the Department Legislative Committee and Division of Vocational Education legislative representative; membership on the Department of Education Curriculum Research Committee, Department Research Committee, and the Vocational-Technical Education Curriculum Committee; membership on advisory committees for the ISU Evaluation Project, Home Economics

Wage Earning Project, and School Holding Power Project; working with other agencies in the coordination of local and State evaluation efforts; and working cooperatively with Michigan educational personnel to continuously identify persons with research capabilities and responsibilities in local educational agencies.

### Dissemination

Activities to disseminate R & D information include the preparation and distribution of brochures, briefs of research projects, summary reports of Federal and State R & D project activities, guidelines for State-funded R & D projects, news releases, and miscellaneous publications. Other dissemination media include radio broadcasts, speeches, personal contacts, and participation in local, state, and national meetings and conferences.

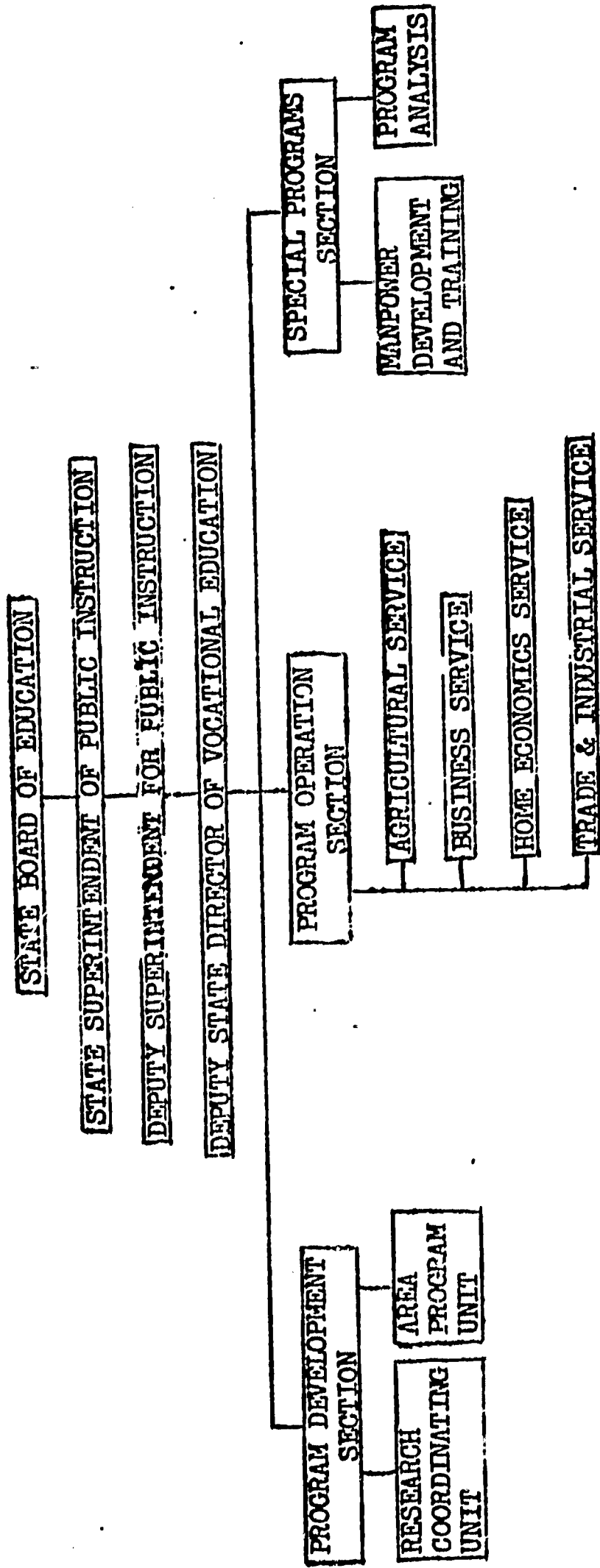
A library of research reports has been established in the RCU. A card file cross-reference system for reports on local, state, and national research projects and activities has been initially completed, from which bibliographies of research reports on file in the RCU have been prepared, with reference materials categorized by specific vocational area, and disseminated. Pertinent bibliographical materials received in the RCU (such as, ERIC catalogs, RCU newsletters and reports, etc.) are routed to staff members in the Division of Vocational Education.

Information related to job projections, as presented in the Michigan Manpower Study, has been summarized in report form by the RCU. Aspirations and occupational plans of students as reported in the Area Studies have been, and will continue to be, analyzed to determine what relationship they may have to job projections to 1980 from the Michigan Manpower Study. Presentations of these summary reports have been made by the RCU staff at workshops and conferences.

The RCU continues to serve as the collection agency for materials to be forwarded to the Educational Research Information Center (ERIC), Michigan-Ohio Regional Educational Laboratory (MOREL), Michigan Employment Security Commission, Battelle Memorial Institute, and other agencies.



CHART I  
 ORGANIZATION CHART  
 DIVISION OF VOCATIONAL EDUCATION  
 MICHIGAN DEPARTMENT OF EDUCATION



## RESULTS

The objectives listed in the previous section were considered by the RCU staff and Advisory Committee, resulting in their adoption. Accomplishments and progress toward these objectives follow:

(1) Build an atmosphere within the State that commits itself to research and is receptive to it--especially with State staff, school leaders, and legislators.

(a) Operational policies for the Vocational Education Research Coordinating Unit have been written and approved by administrators of the Michigan Department of Education. (See Appendix A)

(b) A Vocational Education Research Funds Policy listing priorities, criteria for approving projects, items eligible for funding, and procedural steps for funding from ancillary and State funds has been approved and placed on file in the USOE. (See Appendix B)

(c) Teacher education funds, in the amount of \$49,839, were used to support six research projects during 1965-66. Each of these projects was conducted by a teacher education institution. Matching funds, in the amount of \$4,982, were approved to support the second phase of a pilot project conducted by the Livonia Public Schools. Also approved were \$9,900 in State funds to complete the Michigan Manpower Study. Additionally, eleven Area Vocational-Technical Education Studies were funded at a 50 percent rate, at a cost to the State of \$57,589. Resultingly, the total 1965-66 allocation for research-related projects was \$122,310. (See Appendix C)

No teacher education funds were allocated to research in 1966-67, since the three-year plan of allocating \$50,000 annually for this purpose ended the preceding year. From an initial tentative allocation of \$44,271, seven research projects have been approved for State funding during 1966-67, totaling \$34,507 in matching funds. The contracting agencies for these seven projects include four local school systems, one community college, and two teacher education institutions. Additionally, five new Area Studies, and supplemental funds for completing four continuing studies, were financed with \$46,826 of State funds for the fiscal year. Resultingly, the total 1966-67 allocations, to date, for research-related projects and activities is \$81,333. The RCU also rendered assistance to the Niles Community Schools in the development of a Title III (ESEA) proposal, which was approved in April, 1967, for a three-year operational grant. (See Appendix D)

Briefs of completed projects and a status summary of on-going projects are available for distribution.

(d) The RCU is striving to increase financial support for R & D activities in Michigan by:

(1) A statistical analysis of 4(c) funds allocated during FY 1966 to each state has been completed.

(2) A survey of selected states to determine present methods of supporting research activities has been made.

(3) An analysis of supporting funds for research in Michigan during prior years has been completed.

(4) Meetings have been held with the Director and Deputy Director of the Division of Vocational Education to explore the possibilities of (a) obtaining an increased commitment of annual funds for R & D purposes, and of (b) obtaining a minimal pre-commitment of R & D funds at the beginning of each fiscal year.

(5) Meetings have been held with the Director and Deputy Director of the Division of Vocational Education to discuss the feasibility of a line item in the State budget for Research and Development, with the possibility of using such funds to partially offset the local matching requirement for projects supported with Federal funds.

(6) The RCU recommended, at the request of its advisory committee, that a special meeting of the advisory committee be held with the Director of Vocational Education to discuss various possibilities for immediate and long-range R & D funding programs.

(7) Efforts are underway to provide increased financial support for vocational education research projects through cooperative funding programs. Contacts have been made, and preliminary procedures established, with ESEA Title III, Michigan-Ohio Regional Educational Laboratory, and the Michigan Farm and Power Equipment Association, among others. Contacts are anticipated with other Federal and State funding agencies, and with representatives from educational foundations and private enterprise.

(e) RCU staff members have worked closely with other members of the Program Development Section in the preparation of legislative proposals and supplementary materials related to the

establishment of Secondary Area Vocational Education Centers throughout the State of Michigan. Numerous meetings and conferences were attended, and considerable assistance was rendered in drafting the proposals. Bills have been drafted in the following areas: Operation of Secondary Area Vocational Education Programs; Reimbursement of Costs for Transportation to Area Centers; Capital Outlay (Planning Grants and Construction of Facilities) for Secondary Area Centers; Private Trade Schools Regulations; Regulations Governing Educational Corporations; and, Changes in Election Procedures.

(f) A detailed monthly report of RCU activities is forwarded to the director and deputy director of the Division of Vocational Education, in order to keep them fully informed of the extent of RCU involvement in research activities related to vocational education.

(2) Stimulate projects, ideas and understanding of research.

(a) Two thousand five hundred brochures have been distributed to administrators, researchers, and other key people in Michigan to introduce the RCU and offer its services.

(b) Local educational agencies have been encouraged through the "Manual of Application for Vocational-Technical Programs" to submit proposals for R & D projects.

(c) Proposal "formats" and "guidelines" for writing proposals requesting State funds have been distributed to local educational agencies.

(d) A proposal format for requesting funds under the provisions of Section 4(c) of the Vocational Education Act of 1963 has been prepared and disseminated with the Informal Check List for Proposals.

(e) A flow chart was prepared and used before various groups to describe purposes, activities, and services of the RCU. Included were the Michigan Education Research Council, Research Committee of the Michigan Department of Education, Vocational Education Advisory Council, RCU Advisory Committee, Vocational Education Division staff, and Trade and Industry Teacher Educators. (See Appendix E)

(f) A program describing the RCU purposes and activities was broadcast over radio station WKAR at Michigan State University.



(g) Special meetings of the Division of Vocational Education staff were held to inform consultants of the work of the RCU and to promote understanding and communication. One of the meetings was devoted to the R & D Program at Michigan State University.

(h) Contacts have been established with various research-oriented organizations in Michigan, such as the Department of Education's Research Bureau, Curriculum Research Committee, and the Vocational-Technical Curriculum Committee, for the purpose of stimulating research projects and activities.

(i) Numerous field visits have been made to various educational agencies throughout the State, including those agencies identified as innovative in nature, for the purpose of stimulating research activities.

(j) Presentations have been made to each of the Services of the Division of Vocational Education of the conclusions of the Diffusion Study with visual aids used to implement the presentations.

(k) The R & D status report was presented to T & I Service Advisory Committee, as well as distributed to vocational educators throughout Michigan.

(l) Materials designed to stimulate research projects and ideas are continuously being mailed to vocational educators in Michigan and other states.

(m) The Unit is participating in promotion of "Project Moonshot" in Business Education.

(n) A state-wide, total vocational education instructional materials center is being promoted by the RCU.

(o) A teacher education task force is being promoted by the RCU.

(3) Provide leadership in research-related activities through seminars, conferences and workshops.

(a) A Research Training Workshop was held October 25, 26 and 27, 1966, at Michigan State University--jointly sponsored by the RCU and Michigan State University College of Education and Continuing Education Service. Highlights from the workshop included the following:

A Blueprint for Educational Change  
 RCU Activities & Rationale for Workshop  
 Why Michigan Established a RCU  
 Importance of Research in Local Schools  
 What Type of Research Can Be Accomplished by  
     Local Schools  
 Strategies for Implementing Research  
 Research & Development in the Nation's Schools  
 Using PERT in the Local Situation  
 Levels of Research - A Research Continuum  
 Helps on Proposal Writing  
 What's Going on Now in Research in Michigan  
 Evaluating Local Programs of Vocational Education

Program participants for the workshop included:

Leon J. Alger, Philip T. Bailey, John E. Bean, Harry  
 Blanchard, Lawrence Borosage, Harold M. Byram,  
 Desmond L. Cook, Donald DeLong, Edward Erskine, Arlie  
 G. Fairman, Nicholas P. Georgiady, Peter G. Haines,  
 Terry Hughes, Charles L. Langdon, Robert S. Lankton,  
 John MacDonald, E. J. McGlendon, F. Harold Matthews,  
 Kenneth Morse, Robert A. Pangman, Jeanne Reed, Edward  
 Remick, Everett M. Rogers, Thomas Rushcamp, Larry L.  
 Thomas, Robert E. Turner, Robert M. Winger.

(b) Presentations were made at:

- (1) Annual Conference of Michigan Education Research Council.
- (2) State Conference of the Michigan Association of Schools and Colleges.
- (3) State Conference for Counselors.
- (4) Workshops for Vocational Directors.
- (5) Michigan State University Evaluation Project.
- (6) North Central Guidance Association Conference.
- (7) Wayne County Vocational Guidance Conference.
- (8) Meeting of Michigan Council of Local Administrators of Vocational Education.
- (9) Graduate-level classes at Michigan State University.



(4) Coordinate state education research efforts in the state agency with other state government and professional agencies and professions.

Activities of a coordinative nature include:

(a) Membership on State Curriculum Research Committee.

(b) Membership on Michigan Department of Education Research Committee.

(c) Membership on State Vocational-Technical Education Curriculum Committee. This committee is spearheading the development of a total integrated curriculum of vocational-technical education at all levels, to include aspects of the Altman concept, the "cluster" concept, the Organic Curriculum concept, the Richmond Plan, and others.

(d) Served on Battelle Memorial Institute Technical Advisory Committee for the Michigan Manpower Study.

(e) Co-sponsored state-wide area meetings on Michigan Manpower Study -- Battelle Project -- with Michigan Employment Security Commission and Michigan Office of Economic Expansion.

(f) Participated in Area Vocational-Technical Education Studies meetings.

(g) Provided information for the Governor's office and for the Superintendent of Public Instruction.

(h) Utilized RCU Resource Committee consisting of representatives from each Service of the Division of Vocational Education.

(i) Attended the T & D Integrated Curriculum Seminar at Western Michigan University on October 5, 1966. Dr. David Bushnell met with the T & I staff of the university.

(j) Summer Training Institute Stimulation: Meetings and discussions were held with staffs of the University of Michigan, Michigan State University, and Western Michigan University to promote submission of proposals for summer training institutes.

(k) Attended first meeting of the Michigan Manpower Commission on October 12, 1966. Governor Romney appointed the commission consisting of heads of ten departments of Michigan

government and ten outside agencies concerned with manpower in the State. The purpose of the commission is to coordinate into a meaningful whole the efforts of the various departments and agencies.

(l) Participated in implementation workshop planning for the Area Vocational-Technical Education Studies in various stages of completion in the State.

(m) Considerable progress has been made by the RCU toward the establishment of coordinative procedures with other funding agencies for stimulating research activities in Michigan, reviewing proposals, and funding research projects. The RCU has worked closely with ESEA Title III staff personnel in the promotion of research activities, with additional involvement from ESEA Title I, Section IV of the State Aid Act, and Manpower Program representatives.

(n) Coordination has been maintained with Area Programs, the RCU "companion unit" of the Program Development Section. Weekly Program Development Section staff meetings are held to discuss progress on activities and to plan new directions.

(o) The Coordinator of the RCU served as a "reader" for ESEA Title III proposals, reviewing eight proposals during January and February of 1967.

(p) RCU staff participated in a conference involving representatives from the Michigan Department of Education and the Michigan-Ohio Regional Educational Laboratory (MOREL). The purpose of the conference was to explore the possibilities for interaction between the Department of Education and MOREL.

(q) Represented the RCU at the Statewide Vocational-Technical Education Policy Conference, which was attended by approximately 150 representatives from the various educational organizations, agencies, and levels of education in Michigan.

(r) Represented the Division of Vocational Education at a conference on Federal Housing and Urban Development Programs Affecting the Schools.

(s) Served on the program of the Follow-up Study Conference at Ferris State College, which was one of the four regional meetings sponsored by the Michigan Education Research Council.

(t) Attended meetings of the Committee on Mental Health and Vocational Education and Training for Employment to explore programs for the disadvantaged.

(u) Served as a resource person at a meeting of the Southwest Association of Schools and Colleges.

(v) Prepared a report on "Major Educational Problem Areas in Michigan Counties to Be Served by the Upper Great Lakes Regional Development Commission," participated in subsequent meetings, and provided back-up information for the study committee.

(w) Obtained student enrollment projection data for the Michigan Employment Security Commission.

(x) Assisted in preparation of an instrument for "A Survey of Employment Opportunities and Needed Competencies for Farm and Power Equipment Mechanics' Servicemen and Partsman."

(y) Held meetings with the Bureau of Educational Services Guidance Personnel to establish coordinative procedures and to plan jointly sponsored workshops for counselors and curriculum directors.

(z) Participated in preparation of "A Position Statement Concerning the Development of Area Vocational and Technical Education Programs in Michigan."

(5) Serve as consultants on research ideas and projects that forward vocational education.

(a) Served on the project proposal review panel for Cooperative Research Projects.

(b) Served as a member of the School Holding Power Advisory Committee.

(c) Served on the Home Economics Wage-Earning Study Advisory Committee.

(d) Assisted in writing the following proposals:

State-funded R & D project proposals

Bridgeport Community Schools -- "Development of a Title III (ESEA) Planning Project to Plan and Implement Pre-Technical Education in Michigan" (funded).

Ferndale Public Schools -- "Vocational Training Program for Childcare Aides" (funded).

Livonia Public Schools -- "A Comparative Evaluation and Analysis of Work-Experience and Work-Study Programs in Livonia Public Schools in Relation to Their Impact on Youth" (funded).

Niles Community Schools -- "Developing a Program of Occupational Education for All" (funded).

Lansing Community College -- "An Experimental Pilot Study to Explore the Use of an Audio-Visual-Tutorial Laboratory in the Secretarial Skills Area as a Means of Updating and Improving Curriculum Offerings at the Community College Level in Michigan" (funded).

Portage Public Schools -- "The Development of a Wage Earning Program in Home Economics Involving Institutional and Industrial Cooperative Training."

Waterford Township Schools -- "A Program for the Unemployed School Dropout" (Personal Development Program).

#### 4(c) project proposals

Western Michigan University -- "A Synthesis of Research Findings in Home Economics Education for Wage Earning and Their Implications for the Construction of a Total Integrated Curriculum of Home Economics for Occupational Preparation."

Division of Vocational Education (Agricultural Service) -- "Developing Area Vocational-Technical Education Programs in Michigan for Effective Education for Employment in Agricultural Occupations."

#### ESEA Title III project proposals

Niles Community Schools -- "Occupational Education for All" (funded).

Bridgeport Community Schools -- "Planning a Demonstration Pre-Technical Education Center."

#### Other funding sources - project proposals

Ferris State College -- "A Workshop for Secondary School Counselors to Improve Their Competencies in Working with Technically-Oriented Students" (funded).



Ferris State College - "Information Dissemination Seminars Designed to Give Extensive Distribution to the Findings of the Michigan Manpower Study and the Technician Needs Study" (funded).

Ingham Intermediate District (tentative) & Michigan State University -- "This Could Be Your Life" (the production of an instructional television series at the elementary-school level to promote occupational education).

Vocational-Technical Education Curriculum Committee -- "The Implementation of a Vertically Integrated Occupational Curriculum."

Division of Vocational Education (Program Development Section) -- "Establishing a Task Force to Analyze and Make Recommendations for Needed Improvements and Changes in Teacher Education Programs."

Division of Vocational Education (Program Development Section) -- "Development of a Regional Instructional Materials Center."

Michigan Department of Education -- "Development of Area Vocational-Technical Education Facilities and Programs in the Upper Great Lakes Region."

(e) Met in the office and in the field with persons from local schools, community colleges, colleges and universities, and intermediate districts.

(f) Collected information from other states regarding job clusters for the Vocational-Technical Education Curriculum Committee.

(g) Identified persons assigned research responsibilities in K-12 districts, intermediate districts, and community colleges.

(h) The RCU staff visited all R & D projects funded through the Division of Vocational Education.

(i) Assisted in preparation of a survey instrument, and in analyzing data from a survey of local administrators of vocational education.

(j) Assisted with development and writing of the Project Activities Report for the Division of Vocational Education.

(k) Worked with other members of the Program Development staff in the preparation of a list of "Functional Responsibilities of the Program Development Section," for the purpose of clearly defining the role of PDS in relationship to the other operational units within the Division of Vocational Education.

(l) RCU staff participated in the nationwide study of the Administration of Vocational-Technical Education at the State Level, conducted by the University of California at Berkeley.

(m) RCU staff has actively worked for the establishment of the Michigan Occupational Education Association. One staff member presently serves on the MOEA Interim Committee.

(6) Disseminate research information that enables others to utilize recent research findings.

(a) Twenty briefs of completed research and development projects have been prepared and disseminated to local directors of vocational education, curriculum directors, consultants, researchers, and other key persons. Appendix F lists the briefs completed.

(b) A library and bibliography of research reports has been established, with a three card, cross-reference retrieval by author, institution or city, and subject.

(c) The beginning of a research library of such references as the ENCYCLOPEDIA OF EDUCATIONAL RESEARCH and the HANDBOOK OF RESEARCH ON TEACHING is available to the Division staff and visitors.

(d) Lists of USOE 4(c) projects approved during FY 1966 have been summarized by occupational area and by Michigan origin, and distributed.

(e) Summaries of completed and on-going R & D projects funded from State Vocational monies were disseminated.

(f) Research reports have been obtained from other states and provided to interested persons.

(g) Meetings were held in eight areas of the State, jointly sponsored and staffed by the three agencies that engaged Battelle Memorial Institute to conduct the Michigan Manpower Study. The purpose of these area meetings was to inform educators, chambers of commerce, business, industry, and various agencies regarding job projections to 1980.



(h) Employment projections to 1980 from the Michigan Manpower Study and student aspirations from 27 Area Vocational-Technical Education Studies have been analyzed and compared for implications in counseling and curriculum development.

(i) Research reports are continuously being disseminated to ERIC, MOREL, Michigan Employment Security Commission, Battelle Memorial Institute, MSU R & D Program, ESEA Title III, and other agencies.

(j) An expanded Quarterly Technical Report is mailed to vocational educators in Michigan and RCU directors in other states.

(7) Identify research training needs and personnel.

(a) The RCU conducted a vocational education staffing needs survey.

(b) RCU staff analyzed University Placement Office summary reports.

(c) Meetings have been held with the RCU Advisory Committee to identify research training needs and personnel in Michigan.

(d) The RCU has worked closely with the MSU R & D Program in this area.

(e) Several research-training projects, such as the University of Michigan's Leadership Development Program, have been supported by the RCU.

(f) One Research Training Workshop was held in October, 1966; a second workshop is tentatively scheduled for November, 1967.

(8) Work toward the identification of basic issues and problems needing research.

(a) A "Michigan Vocational-Technical Education R & D Needs Survey" was conducted in 1966, which identified three priority categories: curriculum development, teacher preparation, and guidance. The report of this survey was returned from the printers in December, 1966, and copies have been distributed to vocational educators in Michigan and other states.

(b) The RCU is currently conducting an R & D Needs Probe, to update the findings of the R & D Needs Survey. This probe consists of letters to selected vocational educators and meetings by occupational areas, both designed to identify additional research needs.

(c) Meetings of the RCU Advisory Committee have been held to seek advice on basic issues and problems related to vocational education research.

(d) Members of the RCU Resource Committee have assisted the RCU in the identification of basic issues and problems needing research.

(e) Close contact has been maintained with the MSU R & D Program, for the purpose of identifying research needs in Michigan.

(f) Meetings have been held with vocational educators and agencies, such as MOREL, to identify basic research needs and to plan programs of action which will meet these needs.

(9) Develop long-range plans for research.

(a) Long-range plans for the improvement of existing programs and the establishment of new programs of vocational and technical education in Michigan are centered around three major activities: The R & D Needs Survey to identify priorities, the Diffusion Study to identify innovative schools for operating pilot and demonstration projects, and research workshops to help bring the first two together, thus resulting in operational programs.

(b) Local educational agencies are being encouraged to plan projects well in advance of proposed starting dates, to give the necessary 6 to 18 months lead time.

(c) The RCU is gradually being phased toward State support for continuation after expected cessation of special Federal funds for its operation. March 1, 1967, marked the end of the first 21 months of operation of the Michigan Research Coordinating Unit. The original RCU contract will expire on June 30, 1967. A proposal has been submitted to the U. S. Office of Education for the continuation of the RCU through June 30, 1968.

(d) A new program of projected RCU activities was prepared in January by the RCU staff. Approximately 43 major

activities were listed in detail by the Unit, and then given priority classifications. Many of these activities are underway now, while others are in the process of being "PERTed" as projects to be undertaken during the coming fiscal year. It is anticipated this procedure will provide meaningful direction to the RCU in its efforts to more effectively promote research and developmental activities within the State of Michigan.

(e) The RCU is actively engaged in the promotion of State-wide follow-up studies, designed to provide information which can be used in the evaluation of the effectiveness of vocational education research programs in the State.

(f) Consideration is being given to various proposals for financing research and developmental activities in Michigan during the next five years.

(10) Gather or assist in gathering needed data for a computer-based system of educational information.

(a) The RCU is promoting the adoption of a State-wide computer-based system of vocational education information. The Unit stimulated the appointment of, and presently holds membership on, a VEIS committee which is closely following the progress of the National Vocational Education Information System.

(1) Equipment purchased with the aid of funds under the Vocational Education Act of 1963 is now being coded for inventory purposes.

(2) Discussions have been held with an intermediate district in Michigan, to explore the possibility of a pilot VEIS project.

(3) Meetings have been held with representatives from the Detroit Public Schools for the purpose of stimulating the use of data processing in the follow-up of vocational students.

(b) The RCU is serving as a collection agency for the Vocational-Technical Education Clearinghouse for ERIC, located at Ohio State University.

(11) Work closely with R & D Programs, National Research Centers, and the U. S. Office of Education in coordination of the total research effort.

(a) Close coordination is maintained with the R & D Program at Michigan State University by having their director

serve as a member of the RCU Advisory Committee, and by serving in an advisory capacity on their projects. A jointly-sponsored conference, involving approximately 85 persons, was held on June 3, 1966.

(b) RCU staff attended a reporting meeting of the project directors for the MSU R & D Program, held on October 10, 1966.

(c) An RCU staff member has attended each of the National RCU Conferences held to date.

(d) Research reports have been collected and forwarded to the National Research Center at Columbus, Ohio.

(e) Arrangements are now being made for holding a National Diffusion Study Conference, to be jointly sponsored by the USOE and the Michigan RCU.

(f) RCU director attended the National Conference on Program Planning, Budgeting and Evaluation Procedures, held at the University of Maryland in June, 1967.

## DISCUSSION

Activities of the RCU have been directed primarily toward the stimulation and coordination of vocational education research and development, and the dissemination of research information, for the purposes of encouraging the improvement of existing programs and the establishment of new programs of vocational and technical education in Michigan. The Unit viewed its role as one of identifying the research and development needs, identifying innovative schools to conduct pilot and demonstration programs, and seeking the necessary resources to provide operational programs designed to bring about the adoption of proven practices and techniques.

The RCU was somewhat hampered by a late start, and has been only partially staffed during most of the months of its operation. The Unit has experienced certain difficulties in knowing just how much emphasis should be placed upon the stimulation of R & D activities, primarily due to the uncertainty and lack of funds and the uncertainty of available State funds, resulting from the relatively late date of notification of Federal allocations to the states. Therefore, coordination with the ESEA



Title III staff has been emphasized, and efforts have been increased to locate other sources of aid for vocational education projects that could not be funded from vocational monies.

The specific objectives suggested by the USOE for RCU's were adopted by the Michigan RCU. An analysis of the results of RCU activities during the contract period indicates that the Research Coordinating Unit has achieved marked success in terms of progress made toward the fulfillment of these objectives.

### CONCLUSIONS

The Research Coordinating Unit staff has concluded that the objectives suggested by the USOE are sound, and that its program of activities, selected with the assistance of the RCU advisory and resource committees, is productive in terms of accomplishments toward the objectives. It has further concluded that the major thrusts should be toward the stimulation and coordination of projects and activities in the areas of curriculum development, teacher preparation, guidance, evaluation, instructional materials, and special needs.

The Unit should progress as rapidly as possible toward the fulfillment of these objectives, involving all agencies that have a contribution to make in the development of these major thrusts, and should continue to seek the necessary commitment of human, financial, and physical resources to bring about needed improvement in existing programs and the establishment of new programs of vocational-technical education in Michigan. The primary intent of this commitment is to reduce the existing time lag between research and practice.

It has been recommended that the Research Coordinating Unit be continued as a permanent part of the Division of Vocational Education of the Michigan Department of Education.

## SUMMARY

The Michigan Vocational Education Research Coordinating Unit was established upon receipt of its contract, October 27, 1965, as a part of the Division of Vocational Education of the Michigan Department of Education.

The purpose of the RCU is to stimulate research and developmental activities within the State which will improve existing programs of vocational education and develop needed new programs of vocational-technical education; to function as a coordinating unit for occupational research among those agencies and institutions conducting research and developmental activities; and to disseminate information that will reduce the time lag between research and practice.

Its staff has varied from that of the coordinator and secretary to a maximum staff consisting of the coordinator, two research consultants, a research intern, and two secretaries.

Activities of the Unit have been guided by the objectives set forth in the first national meetings of directors of RCU's in July, 1965, by its advisory committee, and by a resource committee made up of members of the occupational service areas of the Division of Vocational Education. It has assumed the primary functions of stimulation, coordination, and dissemination. This has consisted of a multitude of activities which include the identification of R & D needs; identification of innovative, leader schools to conduct pilot and demonstration projects; promotion of developmental projects in local schools and community colleges; research training workshops; preparation and dissemination of briefs of completed research; assisting in project proposal writing; consulting on R & D ideas and projects; gathering reports for ERIC; and cooperating with other educational and governmental agencies to further research and its adoption.

A continuation proposal has been submitted to the USOE requesting a grant for the period, July 1, 1967, to June 30, 1968.



## APPENDIX A

### OPERATIONAL POLICIES FOR THE VOCATIONAL EDUCATION RESEARCH COORDINATING UNIT

#### Purpose

The purpose of the Michigan Vocational Education Research Coordinating Unit is to stimulate vocational education research; training; and experimental, demonstration and pilot programs; coordinate these activities; and disseminate results to the various educational agencies engaged in occupational education and training.

#### Activities

- (1) Stimulate and encourage occupational education research and developmental activities in the State Department, local school districts, colleges and universities, and other appropriate agencies and organizations.
- (2) Coordinate occupational research activities conducted within the State with the agencies listed above and further coordinate such research activities with those being conducted outside the State.
- (3) Disseminate information on the results and application of occupational education research.
- (4) Stimulate activities which will result in increased interest and improved competence in research such as encouraging pre-service and in-service training of occupational researchers.
- (5) Participate in the review, monitoring or conduct as appropriate of occupational research and development projects supported by Federal, State, local, or private organization funds.
- (6) Identify and maintain an inventory of available occupational research and development resources in light of anticipated needs and programs within Michigan.
- (7) Cooperate with the Michigan Employment Security Commission in the dissemination of available data on employment opportunities, emerging occupational trends, and future job projections as a basis for planning vocational programs, curricula, and facilities within the State.

## Appendix A (continued)

(8) Provide consultative services to educational agencies and State Department personnel relative to the design and conduct of vocational education research.

(9) Identify issues and problems relating to the nature and place of vocational education in the Michigan school system and determine the contributions which occupational research and development can make in resolving them.

(10) Assist in the development of a continuous program of evaluation of vocational-technical education in Michigan.

### Staff Relationships

The Research Coordinating Unit is housed in the Vocational Division of the Michigan Department of Education.

Administratively the RCU is responsible to the Supervisor of the Program Development Section of the Division of Vocational Education. The unit director has the title, "Vocational Education Research Coordinator." Assistants have the title, "Vocational Education Research Consultant."

Functionally, the RCU operates under established policies of the Civil Service Commission and the Department Policy Guide which specify personnel policies and procedures. Travel regulations and all other State and Federal policies, regulations, and procedures governing Services and personnel of the Division apply to the Unit.

The unit director is a member of the Michigan Department of Education Research Committee and serves as a liaison person with the Research and Educational Planning Bureau of the Department. To aid further coordinating effort, the Research and Educational Planning Bureau, the General Education Bureau, the Higher Education Bureau, and the Administrative Services Bureau will each be represented by an advisory person mutually agreeable to the Vocational Education Division and the respective Bureau.

The Unit exercises a staff function and as such provides assistance to all Services of the Vocational Education Division relative to vocational education research. This includes stimulation of research and developmental activities by the various Services and rendering service to them on project design, instrument preparation,

## Appendix A (continued)

and project proposal writing; advising on data collection, analysis, and summarization; and promoting demonstration and pilot programs in vocational-technical education to further try-out findings from research and to encourage adoption of worthwhile innovations.

### Advisory Committee

The RCU utilizes an advisory committee for advice on such overall matters as policy regarding use of State funds for vocational research, identification of vocational-technical research and training needs, experimental, demonstrational, and pilot programs that should be stimulated and other pertinent activities concerning operation of the Unit. Members are appointed by the State Superintendent of Public Instruction for a term of one year.

### Relationships to Local Educational Agencies

A major function of the RCU is its service to local educational agencies. It will endeavor to provide the following stimulatory and coordinative services for vocational-technical education programs:

- (1) Aid in identifying needs for research and developmental activities utilizing the advice of research and program specialists.
- (2) Provide information on the sources of funds for research and development projects.
- (3) Disseminate available data on employment opportunities, trends, and projections.
- (4) Maintain an inventory of occupational research and disseminate findings.
- (5) Provide help in project design, instrument preparation and clearing with the U.S. Budget Office, proposal writing, and give advice on collection, analysis, and summarization of data.
- (6) Provide a review panel for consideration of project proposals and assist with letters of endorsement and approval.
- (7) Assist in establishment of demonstrational and pilot programs of vocational-technical education.
- (8) Conduct conferences and workshops to provide training in research competency.
- (9) Assist in evaluation of local programs of vocational education and provide consultant help requested.

## APPENDIX B

### VOCATIONAL EDUCATION RESEARCH FUNDS POLICY

The industrial world has long recognized the wisdom of committing a portion of its total budget to research and development. The educational world has come to see the wisdom of this, too.

The Vocational Education Division of the Michigan Department of Education proposes a commitment of vocational-technical research and developmental activities for next year and succeeding years sufficient to meet identified needs.

Proposals for research and developmental projects will be carefully screened by a review panel and by staff members of the Division using as guidelines criteria established with the help of an advisory committee. Approval will be granted for those kinds of projects that have been identified by the Division and its advisory groups as being vitally needed for the improvement and expansion of vocational-technical education in the State.

The following stipulations will be applied and modifications will be made in succeeding years as necessary:

(1) First priority will be given to funding area vocational-technical studies with the goal of covering the remaining counties in the State with such studies.

(2) Colleges and universities will be encouraged to apply for funds under Section 4(c) of the Vocational Education Act of 1963 on all projects that could qualify.

(3) A minimum reimbursement rate of 50 percent will be used to fund approved projects. The possibility of increasing this rate will be dependent upon increased State funds for research.

(4) Emphasis will be placed upon developmental projects such as pilot and demonstrational programs especially in local districts and community colleges.

(5) Eligible items for reimbursement will be:

- (a) Project director's salary and travel.
- (b) Salary of instructional staff for portion assigned to the project.



Appendix B (continued)

(c) Salary of clerical staff for portion assigned to the project.

(d) Supplies and materials.

(e) Duplicating and printing costs.

(f) Consultant help.

(g) Salary of personnel in cooperating or clinical schools serving as a laboratory for research projects conducted by teacher education institutions for the portion of their time assigned to the project.

(6) Procedures for processing proposals:

(a) Proposals will be accepted at all times of the year.

(b) Proposals will be reviewed when received and ranked in order of priority by February 1 of each year for funds to be allocated from the following fiscal year's allotment.

(c) A response will be sent to the applicant within a few days.

(1) A card acknowledging receipt of the proposal will be sent by return mail giving a tentative schedule of action to be taken.

(2) Each proposal will be given a quick review by the Research Coordinating Unit staff to determine completeness of information. If further information is needed or if the proposal is obviously ineligible, a letter will be written immediately.

(d) Criteria for approving projects will be established. Proposals will be approved on a priority basis and ranked so that projects falling on the "cut-off" line can be quickly shifted if an approved one fails to materialize.

Tentative criteria:

(1) The scope of the project in terms of state-wide significance.

(2) Need for project in terms of research and developmental needs identified by the Research Coordinating Unit and its advisory groups.

(3) Competency of principal investigator or project director and staff.

(4) Design and procedures.

(5) Facilities.

# APPENDIX C

## MICHIGAN DEPARTMENT OF EDUCATION DIVISION OF VOCATIONAL EDUCATION RESEARCH PROJECTS SUPPORTED WITH STATE VOCATIONAL FUNDS 1965-66

<u>Project Initiator</u>	<u>Project Title</u>	<u>Completion Date</u>	<u>State Funds</u>
Eastern Michigan U. (Hercules Kazanas & Norman Risk)	An Experimental Project to Determine More Effective Voc. Certification Procedures in Michigan (Phase I)	Dec. 1965	\$12,000
Michigan State U. (L. M. Ozzello)	Effects of Cooperative Vocational Education Upon Behavior in the Labor Market	April 1967	7,700
Michigan State U. (Beatrice O'Donnell)	Procedures for Establishment and Evaluation of Training Programs for Wage Earning Occupations Related to Home Economics	Jan. 1967	10,200
Northern Michigan U. (Russell Adams)	Evaluation of Method(s) for Developing Local Leadership for Voc. Educ. (Phase III)	June 1966	5,000
Wayne State U. (G. Harold Silvius)	Mathematical Expectations of Technicians in Michigan's Industries	July 1966	9,139
Western Michigan U. (Raymond Dannenberg & Lyle Perry)	The Value of Programmed Instruction as a Tool for the Enhancement of High School Cooperative Education Student's Career Objectives	Dec. 1966	5,800



# Appendix C (continued)

<u>Project Initiator</u>	<u>Project Title</u>	<u>Completion Date</u>	<u>State Funds</u>
Livonia Public Schools (Neil. Peterson)	A Pilot Project in Voc. Guidance, Placement, and Work Experience for Youth for Whom Existing Work Experiences Are Not Appropriate (Phase II)	June 1966	\$ 4,982
Battelle Memorial Institute (Joseph W. Duncan)	Characteristics of Michigan Labor Force for the Next Fifteen Years (Final Report)	Nov. 1966	9,900
Div. of Vocational Education Program Development Section	Area Vocational-Technical Education Studies (11 studies)		<u>57,589</u>
			<u><u>\$122,310</u></u>

# APPENDIX D

## MICHIGAN DEPARTMENT OF EDUCATION DIVISION OF VOCATIONAL EDUCATION RESEARCH PROJECTS SUPPORTED WITH STATE VOCATIONAL FUNDS 1966-67.

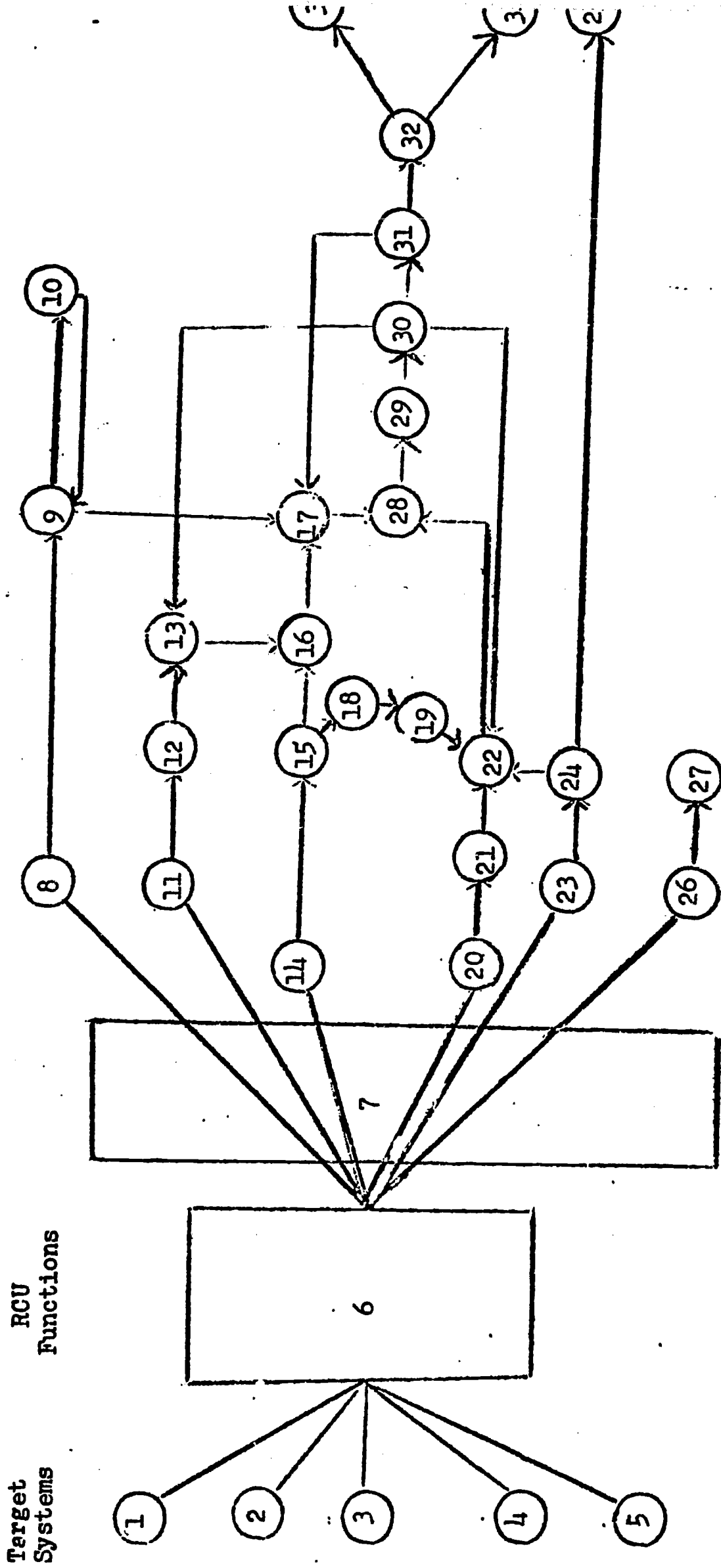
<u>Project Initiator</u>	<u>Project Title</u>	<u>Completion Date</u>	<u>State Funds</u>
Ferndale Public Schools (Theda Connell)	Vocational Training Program for Childcare Aides	June 1967	\$ 4,222
Niles Community Schools (Dan Stevens)	Developing a Program of Occupational Education for All Students (Phase I)	June 1967	11,254
Lansing Community College (Ronald Edwards)	Audio-Visual-Tutorial Methods Study (involving the teaching of office machines courses with films and slides, and comparing the results with a similar class taught by traditional methods)	Aug. 1967	9,445
Livonia Public Schools (John MacDonald)	A Comparative Evaluation and Analysis of Work-Experience and Work-Study Programs in Livonia Public Schools in Relation to Their Impact on Youth (Phase I)	Jan. 1968	3,000
Bridgeport Community Schools (William Holloway)	Development of a Title III (ESEA) Plan- ning Project to Plan and Implement Pre- Technical Education in Michigan	June 1967	1,446

Appendix D (continued)

<u>Project Initiator</u>	<u>Project Title</u>	<u>Completion Date</u>	<u>State Funds</u>
Western Michigan U. (Eunice Herald)	Teaching for Wage Earning (Institute for Program Development in Home Economics for Gainful Employment)	Aug. 1967	\$ 500
University of Michigan (Ralph Wenrich)	The University of Michigan Leadership Development Program for Vocational and Technical Education	June 1968	4,640
Div. of Vocational Education Program Development Section	Area Vocational-Technical Education Studies (5 new studies & supplemental funds for 4 studies)		46,826
			<u>\$81,333</u>

APPENDIX E

# A FLOW CHART OF RCU ACTIVITIES



- |   |   |   |
|---|---|---|
| 1. State Department                         | 18. Communication                                 | 25. Increased Local R & D Activity              |
| 2. Local Schools                            | 19. Create Awareness                              | 26. Voc. Ed. Statistical Information            |
| 3. Community Colleges                       | 20. Conduct Diffusion Study                       | 27. Supplement Annual Descriptive Rep           |
| 4. Colleges & Universities                  | 21. Diffusion Network                             | 28. Contact for Conduct                         |
| 5. Others                                   | 22. Motivation for Action                         | 29. Conduct: Pilot - Evaluation - Demonstration |
| 6. Stimulation, Coordination, Dissemination | 23. Research Training                             | 30. Evaluate                                    |
| 7. Advisory Committee                       | 24. Increased Research Competency & Participation | 31. Diffuse                                     |
| 8. Funding Policy                           |   | 32. Reduce Time Lag                             |
|   |   | 33. Improved Programs                           |
|   |   | 34. New Programs Developed                      |

## APPENDIX F

### BRIEFS OF REPORTS ON RESEARCH STUDIES IN MICHIGAN

The following briefs have been prepared to provide information regarding research studies conducted recently in Michigan, and are available from the RCU. Requests for copies of the full reports or publications should be forwarded to the project directors.

<u>Brief #</u>	<u>Project Title, Project Director, Institution, Date</u>
1	How High School Cooperative Trainees Fare in the Labor Market, Peter G. Haines, Michigan State University, February 1963-May 1965.
2	High School Principal's Perceptions of the Roles and Responsibilities of Persons Who Would Be Charged with the Responsibilities for Leadership in the Development of Occupationally Oriented Programs in High Schools, Ralph C. Wenrich, University of Michigan, School Year 1964-65.
3	Report of a Survey of the Need for Technicians in the Automotive Manufacturing Industry in the Detroit Metropolitan Area, Melvin C. Kavieff, Detroit Public Schools, 1959-1962.
4	A Survey of Agricultural Occupations in Michigan, Charles L. Langdon, Division of Vocational Education, 1965.
5	Technical Education in Michigan Community Colleges, Norman C. Harris, University of Michigan, November 1963-August 1964.
6	Attitudes and Beliefs about Homemaking and/or Home Economics Education in Michigan Secondary Schools, Meta Vossbrink, Michigan State University, School Year 1964-65.
7	Experimental Program for the Identification, Selection, and Development of Persons for Leadership Roles in the Administration and Supervision of Vocational and Technical Education, Ralph C. Wenrich, University of Michigan, Summer of 1964 and School Year 1964-65.



Appendix F (continued)

<u>Brief #</u>	<u>Project Title, Project Director, Institution, Date</u>
8	Evaluating Vocational Education in the Public School, Harold M. Byram, Michigan State University, April 1963-October 1965.
9	Opportunities and Requirements for Initial Employment of School Leavers with Emphasis on Office Retail Jobs, Fred S. Cook, Wayne State University, January 1964-June 1966.
10	Office Machines Used in Business Today, Fred S. Cook, Wayne State University, September 1964-June 1966.
11	The Need for In-School Business Data Processing Programs, Fred S. Cook, Wayne State University, September 1964-June 1966.
12	The Michigan Manpower Study, Joseph W. Duncan, Battelle Memorial Institute, June 1965-October 1966.
13	An Experimental Program Designed to Promote a Greater Interest in Fulfilling Latent Potential in Under-achieving High School Boys through Goal Identification, David H. Soule, Eastern Michigan University, June 1964-July 1964.
14	Mathematical Expectations of Technicians in Michigan Industries, G. Harold Silvius, Wayne State University and Henry Ford Community College, Summer 1965-Summer 1966.
15	Progress Report #2 for the Portage High Schools Practical Training Program, Arland F. Martin, Portage High School, August 1963-July 1964.
16	A Pilot Project in Programmed Learning to Extend Purposes and Increase Factors of Motivation, Frank W. Lanham, University of Michigan, 1963.
17	Education and Training for the World of Work: A Vocational Education Program for the State of Michigan, Harold T. Smith, W. E. Upjohn Institute for Employment Research, 1963.
18	A Question of Values: How High School Teachers View Cooperative Education, Peter G. Haines, Michigan State University, May 1962-September 1962.

Appendix F (continued)

<u>Brief #</u>	<u>Project Title, Project Director, Institution, Date</u>
19	The Michigan Study for Industrial Teacher Competence with Concern for Technical Advance and Its Effects on Policies and Practice for the Initial Preparation and the Upgrading of Industrial Education Teachers, G. Harold Silvius, Wayne State University, February 1963-May 1965.
20	The Value of Programmed Instruction as a Tool for the Enhancement of High School Cooperative Distributive Education Students' Career Objectives, Adrian Trimpe, Raymond A. Dannenberg, and Lyle Perry, Sr., Western Michigan University.
21	The Availability of and Use of Instructional Media and Materials in Departments of Vocational Agriculture in the United States, James Hanneman, NASCO, Inc., completed February 1967.
22	A Pilot Project in Vocational Guidance, Placement, and Work Experience for Youth for Whom Existing Work Experiences Are Not Available, Neil Peterson, Livonia Public Schools, 1965-1967.